



## PATENT ABSTRACTS OF JAPAN

(11) Publication number: 2001078409 A

(43) Date of publication of application: 23.03.2001

(51) Int. Cl. H02K 17/16

(21) Application number: 11249477

(22) Date of filing: 03.09.1999

(71) Applicant: TOSHIBA CORP

(72) Inventor: HIRABAYASHI MAKOTO

**(54) SQUIRREL-CAGE TYPE CAST ROTOR CORE AND MANUFACTURING METHOD THEREFOR****(57) Abstract:**

**PROBLEM TO BE SOLVED:** To reduce residual tensile stress of the secondary conductor of a squirrel-cage type cast rotor core and reduce the thermal bending stress due to the temperature rise of its short-circuit ring, by providing a water-soluble sand mold which has the same number of duct-conductor-oriented holes as the slots of the rotor core between the sand mold and the rotor core, and by casting a melted metal into the slots and the duct-conductor-oriented holes to remove the water-soluble sand mold, after cooling the melted metal.

**SOLUTION:** A water-soluble sand mold, where its inner diameter is nearly equal to the outside diameter of a rotor core 16 and the number of its holes for shaping trapezoidal duct conductor is same as the number of the slots of the rotor core 16 is integrated with the rotor core 16 to cast aluminum of a melted metal into the slots and the holes. Then, there is formed a squirrel-cage type cast rotor core 20 having secondary conductors 14, ducts 17, trapezoidal duct-conductors 18, and short-circuit rings 15 in the rotor core 16. As a result, the pressure generated in the boundary portion between the secondary conductor 14 and the short-

circuit ring 15 is relaxed, and the residual tensile stress of the secondary conductor 14 can be reduced. Still, the inserting position of the trapezoidal duct-conductor 18 is determined by calculating it, based on the difference between the thermal expansion coefficients of the rotor core 16 and the secondary conductor 14, the shape of the trapezoidal duct-conductor 18, the size thereof, and the like.

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